

CLAIMS

What is claimed is:

1        1. A method for locating an object device wirelessly communicating  
2 with at least one node, the method comprising:

3            (a) discovering the nodes wirelessly communicating with the  
4 object device;

5            (b) for each node wirelessly communicating with the object  
6 device, discovering a location of a coverage area for the node; and,

7            (c) discovering an area of location for the object device from  
8 the location of the coverage area for each node wirelessly communicating with  
9 the object device.

1        2. The method of claim 1 wherein discovering the nodes includes:

2            (a) querying nodes to discover devices wirelessly  
3 communicating with each node;

4            (b) generating an index of devices wirelessly communicating  
5 with each node and the nodes to which each device is wirelessly  
6 communicating;

7            (c) selecting the object device from the index; and,  
8            (d) reading the index to discover the nodes wirelessly  
9 communicating with the object device.

1        3. The method of claim 1 wherein discovering the nodes includes  
2 querying nodes to discover whether the object device is wirelessly  
3 communicating with the nodes.

1        4. The method of claim 1 wherein discovering the location of the  
2 coverage area for each node wirelessly communicating with the object device

- 3 includes reading the location of the coverage area for each node wirelessly  
4 communicating with the object device.

1       5. The method of claim 1 wherein discovering the location of the  
2 coverage area for each node wirelessly communicating with the object device  
3 includes:

- 4           (a) reading a node location for each node wirelessly  
5 communicating with the object device; and,  
6           (b) calculating the location of the coverage area from the node  
7 location.

1       6. The method of claim 1 wherein discovering the area of location for  
2 the object device includes discovering a region common to the coverage areas  
3 for each node communicating wirelessly with the object device.

1       7. The method of claim 1 wherein discovering the area of location for  
2 the object device includes discovering a region excluding the coverage areas for  
3 each node not communicating wirelessly with the object device.

- 1       8. A system for locating an object device wirelessly communicating  
2 with at least one node, the system comprising:  
3           (a) a node searcher configured to discover the nodes wirelessly  
4 communicating with the object device;  
5           (b) a coverage area inspector configured to discover a location  
6 of a coverage area for the node for each node wirelessly communicating with  
7 the object device; and,  
8           (c) an area of location finder configured to discover an area of  
9 location for the object device from the location of the coverage area for each  
10 node wirelessly communicating with the object device.

1        9.     The system of claim 8 wherein the node searcher includes:  
2              (a)    an inquirer configured to query nodes to discover devices  
3        wirelessly communicating with each node;  
4              (b)    an indexer configured to generate an index of devices  
5        wirelessly communicating with each node and the nodes to which each device is  
6        wirelessly communicating;  
7              (c)    a selector configured to select the object device from the  
8        index; and,  
9              (d)    an index reader configured to read the index to discover the  
10      nodes wirelessly communicating with the object device.

1        10.    The system of claim 8 wherein the node searcher includes an  
2        inquirer configured to query nodes to discover whether the object device is  
3        wirelessly communicating with the nodes.

1        11.    The system of claim 8 the coverage area inspector includes a node  
2        reader configured to read the location of the coverage area for each node  
3        wirelessly communicating with the object device.

1        12.    The system of claim 8 wherein the coverage area inspector  
2        includes:  
3              (a)    a node reader configured to read a node location for each  
4        node wirelessly communicating with the object device; and,  
5              (b)    a calculator configured to calculate the location of the  
6        coverage area from the node location.

1        13.    The system of claim 8 wherein the area of location finder includes  
2        a mapper configured to discover a region common to the coverage areas for  
3        each node communicating wirelessly with the object device.

1        14. The system of claim 8 wherein the area of location finder includes  
2 a mapper configured to discover a region excluding the coverage areas for each  
3 node not communicating wirelessly with the object device.

1        15. A program storage device readable by a computer, tangibly  
2 embodying a program, applet or instructions executable by the computer to  
3 perform method steps for locating an object device wirelessly communicating  
4 with at least one node, the method steps comprising:

5              (a) discovering the nodes wirelessly communicating with the  
6 object device;

7              (b) for each node wirelessly communicating with the object  
8 device, discovering a location of a coverage area for the node; and,

9              (c) discovering an area of location for the object device from  
10 the location of the coverage area for each node wirelessly communicating with  
11 the object device.

1        16. The program storage device of claim 15 wherein the method step  
2 of discovering the nodes includes:

3              (a) querying nodes to discover devices wirelessly  
4 communicating with each node;

5              (b) generating an index of devices wirelessly communicating  
6 with each node and the nodes to which each device is wirelessly  
7 communicating;

8              (c) selecting the object device from the index; and,

9              (d) reading the index to discover the nodes wirelessly  
10 communicating with the object device.

1        17. The program storage device of claim 15 wherein the method step  
2 of discovering the nodes includes querying nodes to discover whether the object  
3 device is wirelessly communicating with the nodes.

1        18. The program storage device of claim 15 wherein the method step  
2 of discovering the location of the coverage area for each node includes reading  
3 the location of the coverage area for each node.

1        19. The program storage device of claim 15 wherein the method step  
2 of discovering the area of location for the object device includes discovering a  
3 region common to the coverage areas for each node communicating wirelessly  
4 with the object device.

1        20. The program storage device of claim 15 wherein the method step  
2 of discovering the area of location for the object device includes discovering a  
3 region excluding the coverage areas for each node not communicating wirelessly  
4 with the object device.

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